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INITIAL INVENTORY OF THE SEA SLUGS (OPISTHOBRANCHIA AND SACOGLOSSA) FROM THE EXPEDITION KARUBENTHOS, HELD IN MAY 2012 IN GUADELOUPE (LESSER ANTILLES, CARIBBEAN SEA)

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ABSTRACT

A systematic inventory of the sea slugs collected during the expedition **Karubenthos-2012**, in Guadeloupe island (Karukera), is herein presented. It includes a total of 117 species; 97 Opisthobranchia and 20 Sacoglossa; 85 of them are recorded for the first time. Previous records of other species not collected in the campaign are added to the catalog, which includes a total of 127 species, 42 of them illustrated. Additionally, a new species of *Dendrodoris* Ehrenberg, 1831, is described and specimens of *Paradoris indecora* (Marcus, 1970) and three different species of *Doto* Oken, 1815 collected for the first time in Guadeloupe, are studied in detail: *Doto awapa* Ortea, 2001, *Doto curere* Ortea, 2001 and *Doto torrelavega* Ortea & Caballer, 2005.

Key words: Mollusca, Opisthobranchia, Sacoglossa, Caribbean, Guadeloupe, Karubenthos, Inventory, new records, new species, *Paradoris*, *Dendrodoris*, *Doto*.

RESUMEN

Se presenta un inventario sistemático de 117 especies de babosas marinas, 97 Opistobranquios y 20 Sacoglosos, recolectadas durante la expedición **Karubenthos-2012**, en la isla de Guadalupe (Karukera), de las cuales, 85 se citan por primera vez. A las 117 especies inventariadas se les añaden las citas que ya existían en la literatura, para completar un catálogo de 127 especies, 42 de ellas ilustradas. Adicionalmente, se describe una nueva especie de *Dendrodoris* Ehrenberg, 1831, se estudian en detalle los animales de *Paradoris mulciber* (Marcus, 1970) y de las tres especies de *Doto* Oken, 1815 recolectadas en la isla *D. awapa* Ortea, 2001, *D. curere* Ortea, 2001 y *D. torrelavega* Ortea y Caballer, 2005.

Palabras claves: Mollusca, Opisthobranchia, Sacoglossa, Caribe, Guadalupe, Karubenthos, inventario, nuevas citas, nueva especie, *Paradoris*, *Dendrodoris*, *Doto*.

1. INTRODUCTION

The taxonomic history of the fauna of sea slugs of Guadeloupe is brief. Only a few species have his type locality on the island; a remarkable example is *Lobiger souverbii* P. Fischer, 1857, one of the most singular sacoglossa in the Atlantic. This species was recorded almost contemporaneously to its original description in Guadeloupe, as *Elysia* sp. by DESHAYES [5], in a paper not very disseminated. This reference does not appear in compilation works, such as the one published by MARCUS [16], whose checklist does not record a single sea slug in Guadeloupe. However, DESHAYES [5] describes *Polybranchia viridis* (Deshayes, 1857) in the archipelago, one of the largest known sacoglossa, and also the genus *Tridachia* Deshayes, 1857, based on a specimen he wanted to dedicate to Schramm, the collector, but did not wrote the specific epithet. Thus, MÖRCH [17] named it after the description of *Elysia* (*Tridachia*) *crispata* Mörch, 1863 (pp.40-41), which is actually the same species, leaving the name *Tridachia schrammi* Mörch, 1863 in the synonymy of *Elysia crispata*.

Records of sea slugs are also few and occasional throughout the nineteenth and twentieth centuries, highlighting the species of cephalaspidea cited by D'ORBIGNY [6]: *Acteocina candei, Acteocina recta, Atys caribaeus, Cylichnella bidentata, Haminoea antillarum, Retusa sulcata* and *Volvulella acuta*, whose original descriptions were based on samples from Cuba and other Caribbean locations, including Guadeloupe. Posteriorly, several specimens from Guadeloupe were subsequently described as *Haminoea guadaloupensis* Sowerby, 1868, which is actually synonymous to *H. antillarum*. DESHAYES [5] recorded *Aplysia dactylomela* Rang, 1828, as *Aplysia schrammii* Deshayes, 1857, and *Aplysia cailleti* Deshayes, 1857, synonymous to *Aplysia brasiliana* Rang, 1828, that could in fact be *Syphonota geographica* (Adams and Reeve, 1850) common in Guadeloupe. Furthermore, Deshayes makes the first reference to a species that would be described later by MÖRCH [17], as *Berthellinia quadridens*, based on specimens from St. Thomas. This island is the type locality of *Aphelodoris antillensis* Bergh, 1879 and five other species of sea slugs, very common in the Caribbean, also described by MÖRCH [17]: *Oxynoe antillarum*, *Pleurobranchus areolatus*, *Platydoris angustipes*, *Dendrodoris krebsii* and *Bornella calcarata*, the latter with additional specimens from Guadeloupe. All the rest are isolated records, BERGH [1] cites *Phidiana lynceus*, and HAMMAN & FARMER [11] include a paratype from Guadeloupe in the original description of *Plocamopherus pilatectus* Hamman & Farmer, 1988.

In the late twentieth century, POINTIER & LAMY [26] cited 8 cephalaspidea from Guadeloupe, six of them for the first time and an umbraculid, *Umbraculum umbraculum* (Lightfoot, 1786), one of the largest sea slug in the Caribbean, with 30 cm long and more than 1 kg.

In the XXI century, VALDÉS, HAMMAN, BEHRENS & DUPONT [27] record 27 species of sea slugs from Guadeloupe, of which 18 are considered in this inventory, even when they lacked bibliographic support or were based on photographs of the living animals from the archipelago. Erroneous determinations of animals from Guadeloupe illustrated in that book have not been considered, such as: *Philinopsis bagaensis* Ortea, Moro & Espinosa, 2007, figured as *Philinopsis pusa* (Marcus & Marcus, 1966).

2. MATERIALS AND METHODS

The material in which this inventory is based, was collected between May 1st and May 28th, 2012. Two-hundred and seventy-two intensive field trips were carried out in 71 sampling

stations. Samples were obtained using the following methods: direct search, scraping, brushing, underwater vacuum cleaning and dredging, from the shore to 258 m depth. All samples were processed onshore; placed in trays for examination and selection of specimens in the laboratory.

Of the total number of species in this inventory, 31 records previous to this expedition are marked with an asterisk (*), which is missing in the **83** new records for Guadeloupe. There are 10 species cited by other authors, which were not collected in this campaign, these are underlined in the list, unnumbered. All species previously recorded are followed by the corresponding bibliographic reference. Only the first locality where a species was collected during Karubenthos-2012 is referred in this catalog. The original name of the stations in French has been kept to avoid discrepancies with the general list of stations of the expedition. Abbreviations: GCSM=Grand Cul de Sac Marin and PCSM=Petit Cul de Sac Marin.

Tissue samples for molecular studies were taken in 90% of the species in the catalog.

3. SYSTEMATICS

SYSTEMATIC LIST OF SPECIES
(Species in alphabetical order within each genus)

Subclass OPISTOBRANCHIA

Order ARCHITECTIBRANCHIA

Family APLUSTRIDAE Gray, 1847
Genus *Hyatina* Schumacher, 1817
***Hydatina physis* (Linnaeus, 1758)** [26]
Genus *Micromelo* Pilsbry, 1895
***Micromelo undatus* (Bruguiere, 1792)** [26]

Family ACTEONIDAE d'Orbigny, 1843
Genus *Mysouffa* Marcus, 1974
* ***Mysouffa cumingii* (A. Adams, 1855)** [27] PCSM, dredging at -3 m.
Genus *Japonacteon* Taki, 1956
* ***Japonacteon punctostriatus* (C.B. Adams)** [27] Tête à l'Anglais, rocky bottom, -23 m.

Order CEPHALASPIDEA

Family BULLIDAE Gray, 1827
Genus *Bulla* Linné, 1758
***Bulla occidentalis* A. Adams, 1850** Petite Anse, -5 m.
* ***Bulla striata* Bruguière, 1792** [26] GCSM Banc-Frotte-ton-cul, -2 m.

Family CYLINDROBULLIDAE Thiele, 1931
Genus *Cylindrobulla* Fischer, 1857
* ***Cylindrobulla beauii* P. Fischer, 1856** [27] PCSM, Ilet du Gosier, -6 m.

Family Haminoeoidae Pilsbry, 1865

Genus *Haminoea* Turton & Kingston,1830

* ***Haminoea antillarum* (d'Orbigny, 1841)** [6] — Port-Louis, -16 m.

* ***Haminoea elegans* (Gray, 1825)** [26] — GCSM, îlet à Colas, -15 m.

***Haminoea petiti* (d'Orbigny, 1841)** [26] — Petite Anse, -5 m.

***Haminoea succinea* (Conrad, 1846)** — au large Anse à la Barque, -50 m.

Genus *Atys* Montfort, 1810

***Atys alayoi* Espinosa & Ortea, 2004** — Les 3 arches (Port-Louis), rocky bottom, 16 m.

* ***Atys caribaeus* (d'Orbigny, 1841)** [6][1] — Pointe de l'Ermitage, rocky bottom, -11 m.

***Atys guildingi* (Sowerby, 1869)** — GCSM, sandy bottom, -3 m.

***Atys macandrewii* E. A. Smith, 1872** — Anse à la Barque, meadow of *Halophila stipulacea.*

* ***Atys riiseanus* Mörch, 1875** [26] — Petite Anse, -5 m.

***Atys sharpi* Vanatta, 1901** — GCSM, Ilet à Colas, -15 m.

Family Philinidae Gray, 1850

Genus *Philine* Ascanius, 1772

***Philine caballeri* Ortea, Espinosa & Moro, 2001** — GCSM, outer slope, -23 m.

Family Aglajidae Pilsbry

Genus *Aglaja* Renier, 1807

***Aglaja felis* Marcus & Marcus, 1970** — GCSM, sandy bottom, -3 m.

Genus *Chelinodura* A. Adams, 1855

***Chelidonura cubana* Ortea & Martínez, 1997** — Pointe à Lézard, rocky bottom, -12 m.

* ***Chelidonura hirundinina* (Quoy & Gaimard, 1833)** [27] — GCSM, sandy bottom, -3 m.

***Chelidonura mariagordae* Ortea, Espinosa & Moro, 2004** — GCSM, sandy bottom, -1 m.

Genus *Navanax* Pilsbry, 1895

* ***Navanax gemmatum* (Mörch, 1863)** [27] — Îlet Fortune, rocky intertidal

Genus *Spinoaglaja* Ortea, Moro & Espinosa, 2007

***Spinoaglaja petra* (Ev. Marcus, 1976)** — GCSM, Ilet à Colas, -15 m

Genus *Philinopsis* Pease, 1860

***Philinopsis bagaensis* Ortea, Moro & Espinosa, 2007** — Le Moule, mixed seagrass meadow, -1 m.

Family Cylichnidae H. & A. Adams, 1854

Genus *Acteocina* Gray, 1847

* ***Acteocina candei* (d'Orbigny, 1841)** [6] — Tête à l'Anglais, rocky bottom, -21 m.

***Acteocina lepta* Woodring, 1928** — Anse à la Barque, meadow of *H. stipulacea,* -14 m.

* ***Acteocina recta* (d'Orbigny, 1841)** [6] — GCSM, coral seabed, -11 m.

Genus *Tornatina* A. Adams, 1850

***Tornatina liratispira* E. A. Smith, 1872** — GCSM, outer slope, coral seabed, -11 m.

Genus *Cylichnella* Gabb, 1873

* ***Cylichnella bidentata* (d'Orbigny, 1841)** [6] — GCSM, au large de Fajou, coral seabed, -22 m.

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[1] In POINTIER & LAMY [26] the names *A. riseanus* and *A. caribaeus* are inverted in relation to the images on the page 166.

Genus *Scaphander* Montfort, 1818
* ***Scaphander watsoni* Dall, 1881** [26] — Port-Louis, -80 m.

Family Gastropteridae Swainson, 1840
Genus *Gastropteron* Meckel *in* Kosse, 1813
***Gastropteron vespertilio* Gosliner & Armes, 1984** — Sud Port-Louis, dredging, -4 m.

Family Retusidae Thiele, 1925
Genus *Retusa* Brown, 1827
* ***Retusa sulcata* (d'Orbigny, 1841)** [6] — Anse à la Barque, -45 m.
Genus *Pyrunculus* Pilsbry, 1895
***Pyrunculus caelatus* (Bush, 1885)** — au large Anse à la Barque, -50 m.
Genus *Volvulella* Newton, 1891
***Volvulella permisibilis* (Mörch, 1875)** — Anse à la Barque, -45 m.
***Volvulella ischnatracta* (Pilsbry, 1930)** — Baie de Bouillante, -13 m.

Order RUNCINACEA

Family Runcinidae H. & A. Adams, 1854
Genus *Lapinura* Marcus & Marcus, 1970
***Lapinura divae* (Marcus & Marcus, 1963)** — Pointe de l'Ermitage, rocky intertidal, -1 m.

Order APLYSIOMORPHA

Family Akeridae Pilsbry, 1893
Genus *Akera* Müller, 1776
***Akera thompsoni* Olsson & McGinty, 1951** — Tête à l'Anglais, rocky bottom, -23 m.
***Akera bayeri* Marcus & Marcus, 1967** — GCSM, dredging, -70 m.

Family Aplysiidae Lamarck, 1809
Genus *Aplysia* Linné, 1758
* ***Aplysia dactylomela* Rang, 1828** [6] — Îlet Fortune, rocky intertidal.
* ***Aplysia parvula* Mörch, 1863** [27] — GCSM, meadow of *Thalassia*, -3 m.
Genus *Syphonota* Adams & Adams, 1854
***Syphonota geográfica* (Adams & Reeve, 1850)** — intérieur Anse Caraïbe, -10 m.
Genus *Dolabrifera* Gray, 1847
***Dolabrifera dolabrifera* (Rang, 1828)** — Îlet Fortune, rocky intertidal.
Genus *Petalifera* Gray, 1847
***Petalifera petalifera* (Rang, 1828)** — Le Moule, seagrass meadows, -1 m.
***Petalifera ramosa* Baba, 1959** — intérieur Baie Caraïbe, -3 m.
Genus *Phyllaplysia* P. Fischer, 1872
***Phyllaplysia engeli* Er. Marcus, 1955** — GCSM, Ilet à Colas, -15 m.
Genus *Bursatella* de Blainville, 1817
***Bursatella leachii* de Blainville, 1817** — Gros mouton de Caret, coral reef, -5 m.
Genus *Stylocheilus* Gould, 1952
***Stylocheilus striatus* (Quoy & Gaimard, 1832)** — GCSM, îlet à Colas, -15 m.
Genus *Notarchus* Cuvier, 1817
***Notarchus punctatus* Philippi, 1836** [27]

Family Umbraculidae Dall, 1889
Genus *Umbraculum* Schumacher, 1817
***Umbraculum umbraculum* (Lightfoot, 1786)** [26]

Order PLEUROBRANCHOMORPHA

Family Pleurobranchidae Gray, 1827
Genus *Pleurobranchus* Cuvier, 1804
***Pleurobranchus crossei* Vayssière, 1897** — Anse à la Barque, rocky intertidal, -1 m.
***Pleurobranchus areolatus* Mörch, 1863** — Grotte aux barracudas, Port-Louis, -19 m.
Genus *Berthella* de Blainville, 1825
***Berthella stellata* (Risso, 1826)** — Les 3 Arches (Port-Louis), -11 m.
Genus *Berthellina* Gardiner, 1936
* ***Berthellina quadridens* (Mörch, 1863)** [17] — Îlet Fortune, rocky intertidal.

Order NUDIBRANCHIA

Suborder Doridacea
Family Hexabranchidae Bergh, 1891
Genus *Caribranchus* Ortea, Caballer & Moro, 2002
***Caribranchus morsomus* (Marcus & Marcus, 1962)**
Port-Louis, remains of a sunken airplane, -20 m.

Family Aegiretidae Fischer, 1883
Genus *Aegires* Lovén, 1844
***Aegires ortizi* Templado, Luque & Ortea, 1987** — Les 3 Arches (Port-Louis), -11 m.
***Aegires sublaevis* Odhner, 1932** — Derrière Ilet Fajou, -6 m.

Family Goniodorididae H. Adams & A. Adams, 1854
Genus *Trapania* Pruvot-Fol, 1931
***Trapania dalva* Ev. Marcus, 1972** — Pointe d'Antigua (Port-Louis), -45 m.

Family Polyceridae Alder & Hancock, 1845
Genus *Polycera* Cuvier, 1817
***Polycera odhneri* Er. Marcus, 1955** — GCSM, face à Fajou, coral seabed, -23 m.
Genus *Plocamopherus* Leuckart, 1828
* ***Plocamopherus pilatecta* Hamann & Farmer, 1988** [11]
GCSM, face à Fajou, coral seabed, -15m.

Family Chromodorididae Bergh, 1891
Genus *Chromodoris* Alder & Hancock, 1855
***Chromodoris binza* Er. Marcus, 1963** — Îlet Fortune, rocky intertidal.
***Chromodoris clenchi* (Russell, 1935)** — Baie du Nord-Ouest (Le Moule), -1 m.
Genus *Noumea* Risbec, 1928
***Noumea regalis* Ortea, Caballer & Moro, 2001** — Grotte Amédier, -12 m.
Genus *Hypselodoris* Stimpson, 1855
***Hypselodoris acriba* Marcus & Marcus, 1967 [27]**

***Hypselodoris bayeri* (Marcus & Marcus, 1967)** Pointe sur Baie de Baille-Argent, -35 m.
* ***Hypselodoris ruthae* Marcus & Hughes, 1974 [27]** Tête à l'Anglais, rocky bottom, -23 m.

Family Cadlinidae Bergh, 1891
Genus *Cadlina* Bergh, 1878
***Cadlina rumia* Er. Marcus, 1955** GCSM Banc-Frotte-ton-cul, -2 m.

Family Doridae Rafinesque, 1815
Genus *Doris* Linné, 1758
***Doris bovena* Er. Marcus, 1955** Îlet à Cabrit, meadow of *Thalassia*, -1m.
***Doris fretterae* Thompson, 1980** Îlet Fortune, rocky intertidal.
Genus *Sirairus* Marcus, 1955
***Sirairus kyolis* Marcus & Marcus, 1967** Îlet Fortune, rocky intertidal.
Genus *Aphelodoris* Bergh, 1879
* ***Aphelodoris antillensis* (Bergh, 1879)** [27] Îlet Fortune, rocky intertidal.

Family Discodorididae Bergh, 1891
Genus *Discodoris* Bergh, 1877
* ***Discodoris evelinae* Er. Marcus, 1955** [27] Îlet Fortune, rocky intertidal.
***Discodoris hedgpethi* Marcus & Marcus, 1960** Pointe Gris-Gris (Port-Louis), -2 m.
Genus *Paradoris* Bergh, 1884
***Paradoris mulciber* (Marcus, 1970)** Trou à l'orage, -9 m.

Detailed study on *Paradoris mulciber* (Marcus, 1970) with remarks on its variability regarding to other species from the Atlantic

The taxonomic history of the genus *Paradoris* Bergh, 1884 in the Caribbean Sea can be summarized in four publications: MARCUS [14 and 15], ESPINOSA & ORTEA [7] and CAMACHO & GOSLINER [3]. MARCUS [14] introduced the genus *Percunas*, type species *Percunas mulciber* Marcus, 1970, based on a 21 mm long fixed specimen collected in Juriaçu, Brazil (type locality), right in the Equator (00°04'S, 44°33'W). Later, MARCUS [15] synonymizes *Percunas* with *Paradoris*, expanding its original description with the record of a 35 mm long fixed specimen, collected in Pernambuco, Brazil. All the material used by Marcus is in turn used by DAYRAT [4] to redescribe the species, which is again re-redescribed by CAMACHO & GOSLINER [3] based on the remains of the two dissected animals by MARCUS [14 and 15] and reviewed by DAYRAT [4], and other 6 specimens of 15-56 mm fixed, collected under stones, between 9 and 12 m deep in Manzanillo and Cahuita (Limón, Costa Rica) in 1998-99. These specimens were the base to the previous record of the species in Costa Rica by ESPINOSA & ORTEA [7]. The capture of two big-sized specimens in Guadeloupe and Martinique has provided new diagnostic anatomical data on the species. Additionally, high quality digital illustrations on the external anatomy are provided and the variability regarding to other Atlantic species of the genus is discussed.

Paradoris mulciber (Marcus, 1970)

(Plates 1-2 and Table 1)

Material examined: Guadeloupe, Trou à l'orage (16°22,88'N, 61°31,43'W), May 18, 2012, 1 specimen 73 mm long alive, under rocks, 9 m depth. South of Martinique, October 7, 2011, 1 specimen of 50x32 mm fixed, collected overnight in a rocky bottom.

Description: Mantle pale pink to brownish orange dorsally, very uniform throughout the mantle, with conical or truncated tubercles of diverse diameters and heights distributed randomly. Hiponotum pearl grey. Sole off white. Both with small reddish spots widely scattered. Front edge of the foot furrowed and cleft. Oral tentacles grooved, with red dots. Gill, a sixth of the body length, reaching the mantle when extended. Six branchial folds, tri-tetrapinnated, translucent pink, with golden granules on the borders. Rhinophores with translucent grey stalks, thicker than the lamellae part. Tips small and white. Lamellae 20-21, brown, with scattered reddish brown dots. Rhinophorical sheaths high, rough, with an irregular opening. Genital opening with thickened rim, on the right side of the hiponotum, near the foot. Preserved specimens: mantle dark gray; hiponotum pearl grey, sole off white, both lack reddish spots.

Blood gland double, with anterior lobe more than three times the diameter of posterior lobe. Albumen and mucus glands very well developed, 25 mm long, 8 mm wide, invading the body cavity on the righ side of the hepatopancreas, above the rest of the reproductive system. Prostate long and folded. Bursa copulatrix spherical, two times the diameter of the seminal receptacle, which is also spherical. Ampulla U-shaped. Vagina with two accessory glands and three muscular sacks with stylets of about 600 microns.

Labial cuticle composed of two triangular 5 mm long pieces, holster-shaped, and an odd piece, 1 mm long and 2 mm wide, butterfly shaped (Plate 2 A-B). All pieces golden-amber colored. Radula (78 x 22.0.22) with 78 rows; each half row with 22 teeth (in row 25). The innermost teeth characterized by the highly variable shape of the hook (Plate 2 C-D). Outermost teeth very regular; last three teeth (20-22) always with an anterior apophysis at the base of the hook, absent in the remaining teeth. Hook of the largest teeth (16-18) about 200 microns. All teeth with the external groove in the hook, characteristic of the genus.

Discussion: Characters such as the shape and arrangement of the mantle tubercles, the rhinophorical sheath, the odd piece of the labial cuticle and the great development of both; the albumen and the mucus glands, distinguish *P. mulciber* from the eastern Atlantic species *Paradoris indecora* (Bergh, 1881), with which it shares the radular structure, a similar genitalia and other characters, like the network of spicules on the hiponotum, invisible to the naked view in living animals, but very apparent in other two Atlantic species, *Paradoris inversa* Ortea, 1985 and *Paradoris ceneris* Ortea, 1985.

In order to distinguish *P. mulciber* from *P. indecora*, CAMACHO & GOSLINER [3] agree with the diagnosis of DAYRAT [4], according to which *P. indecora* can have 1-2 accessory glands in the vagina and a maximum of three stylets (0-3), (though in Table 1 they indicate only one gland and three stylets) *versus* the two glands and the three stylets of *P. mulciber*. So, according to that, the same character is very variable in one species and very stable in the other, regardless that, DAYRAT [4] established this intraspecific variability for *P. indecora* to synonymyce three species described by ORTEA [18] in the Canary Islands (*Paradoris inversa*, *Paradoris mollis* and *Paradoris ceneris*). DAYRAT [4]) supports the proposal of synonymy based on the study of the remains of the holotypes, which lack genital ar-

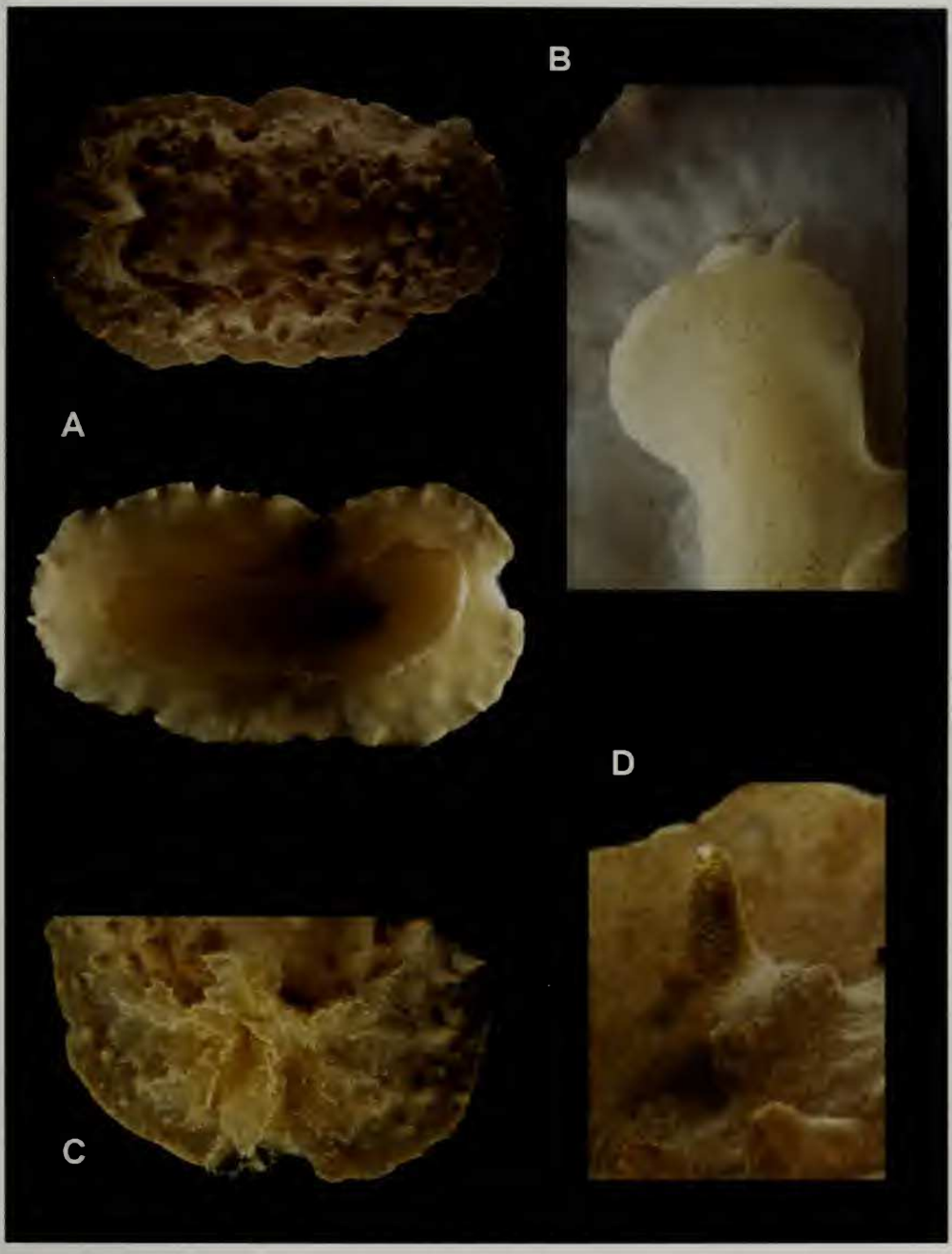

Plate 1.- *Paradoris mulciber* (Marcus, 1970), 73 mm long: **A.** Dorsal and ventral views; **B.** Detail of the mouth; **C.** Detail of the gill; **D.** Detail of the rhinophores.

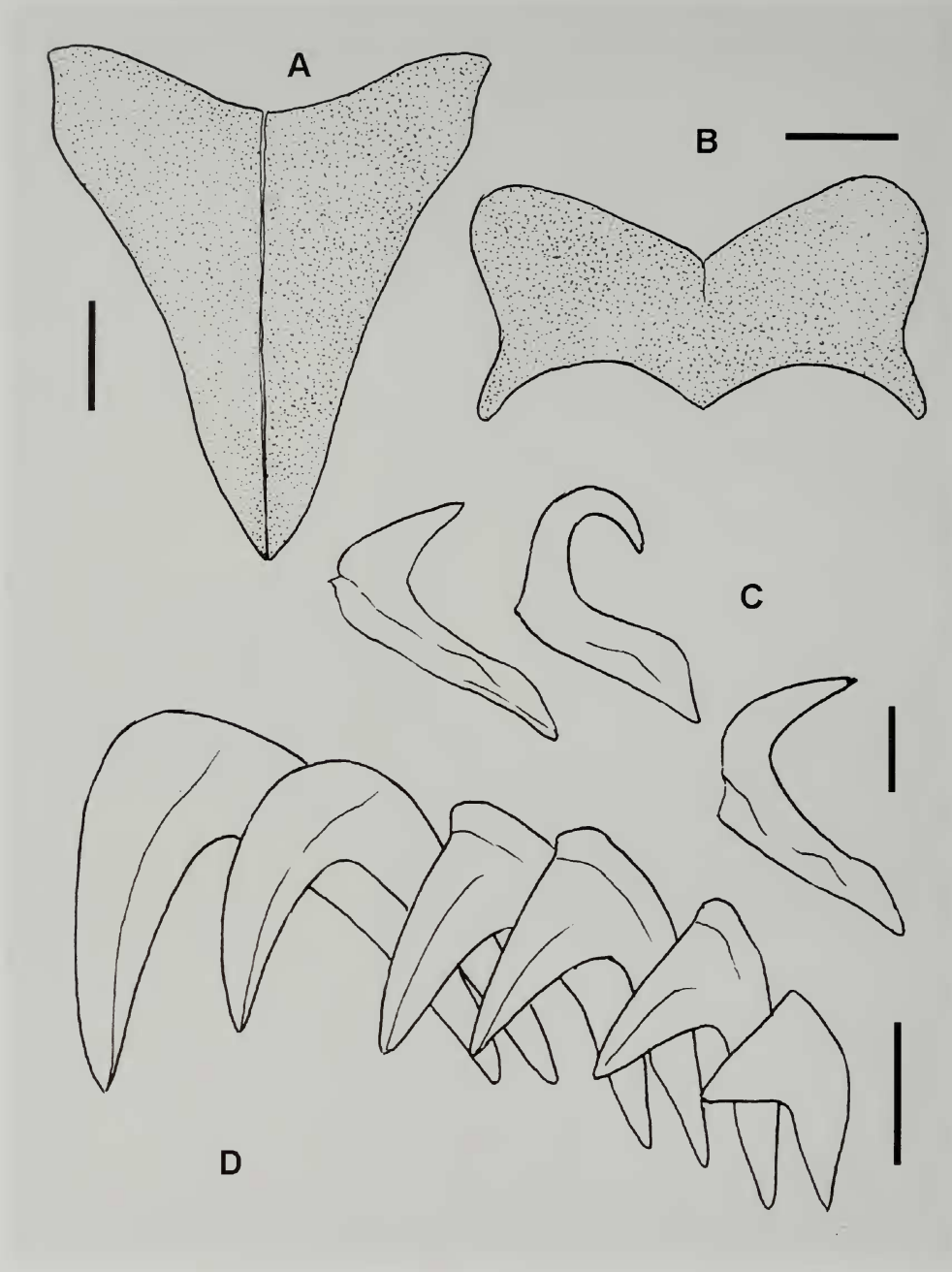

Plate 2.- *Paradoris mulciber* (Marcus, 1970), 73 mm long: **A-B.** Dorsal (scale 1 mm) and ventral (scale 0.5 mm) parts of the jaw; **C.** Variation of the first lateral inward tooth, (scale 50 μm); **D.** Outward lateral teeth 17-22 (scale 50 μm).

Table 1.- Comparison of characters of several Atlantic species of *Paradoris*.

SPECIES	DISTRIBUTION	DORSAL COLOR	VENTRAL COLOR	MIDDLE PART OF THE *NOTUM*	RHINOPHORAL SHEATHS	BRANCHIAL LEAVES	PROSTATE	ACCESORY GLANDS	STYLETS	RADULA
Paradoris indecora Bergh. 1881	Mediterranean Sea, Portugal and Canary islands	Whitish cream or brown ocher to grayish cream	White or cream with brown-reddish small spots	smooth	No tubercles	6-8 tripinnate leaves	A widened section of the deferent duct, with a cavity containing the gametolytic gland	3	3 (0.5-0.7 mm)	51 x (20.0.20) in 30 mm long specimen
Paradoris mulciber (Marcus, 1970)	Brazil, Costa Rica and Guadeloupe	Pale cream, scattered with numerous small dark brown spots, composed of an aggregate of brown points	White with dark spots arranged separately	With tubercles arranged regularly	Some specimens with 1-2 tubercles at each side	6 tripinnate leaves	Very large and folded into itself	2	3 (0.5 mm)	55 x (18.0.18) in 18 mm long specimen
Paradoris inversa Ortea, 1995	Tenerife, Canary islands	dark gray, speckled with gray bluish to cream ground color	White grayish without reddish points	Covered with tubercles smaller than those in the borders	No tubercles	6 tripinnate leaves, the posterior larger than the anterior ones	Granulose	2	2 (0.45 mm)	46 x (16.0.16) in 20 mm long specimen
Paradoris mollis Ortea, 1995	Adeje, Tenerife, Canary islands	black, lighter near the edges	Pale gray	Very soft when it is touched, with tubercles arranged mainly on the visceral region	No tubercles	6 tripinnate leaves	Lobate	Lacking accessory glands	2 (0.6 mm)	54 x (18.0.18) in 30 mm long specimen
Paradoris ceneris Ortea, 1995	Lanzarote, Canary islands	Grayish to cream speckled with brown spots	White yellowish	Close to the margins the color is yellowish	No tubercles	7 tetrapinnate leaves	Granular and folded	Lacking accessory glands	Absent	50 x (17.0.17) in 25 mm long specimen

mature, radula and jaw. Although that, he considers *P. indecora* as a polymorphic species, whose body can be as soft as a *Dendrodoris* and live in a cave on the black sponge *Aaptos aaptos* (T. Cruz pers. comm.) (*P. mollis*) or as leathery as a *Platydoris* and inhabit the network of large sponges of the genus *Ircinia*, having the gill flattened with the anterior leaves smaller than the posterior ones, a clear adaptation to the environment (*P. inversa*). Additionally, DAYRAT [4] stated that *P. indecora* has 1-2 accessory glands and up to 3 sacks with stylets (0-3) associated to the vagina; this variability range does not comprises the absence of glands, combined with the presence of 2 sacks with stylets in *P. mollis*, neither the absolute lack of all these structures in *P. ceneris*, whose vagina has no glands or sacks. More than 200 specimens of *P. indecora* have been collected from the Western Mediterranean to the Canary Islands, and all the specimens over 14 mm have two accessory glands and three muscular sacks with stylets up to 600-700 microns (ORTEA [18] and unpublished data), as well as in the Caribbean species *P. mulciber*. Thus, the synonymies proposed by DAYRAT [4], based on a supposed intraspecific variability are, in fact, an elaborate frivolity, especially because all the material examined by DAYRAT [4] was preserved, this author has never collected or seen a living specimen. If the variability of *P. indecora* given by DAYRAT [4] was correct, *P. mulciber* would be a junior synonym, like most of the world's species studied by GOSLINER & CAMACHO [3]. These authors omitted data on the species from the Canary Islands (ORTEA [18]) in the comparative table, to prevent it can be proved that they are different species.

Genus *Platydoris* Bergh, 1877
***Platydoris angustipes* (Mörch, 1863)** — Îlet Fortune, rocky intertidal.
Genus *Rostanga* Bergh, 1879
***Rostanga byga* Er. Marcus, 1958** — Pointe de Quesy, rocky bottom, -11 m.
Genus *Diaulula* Bergh, 1879
***Diaulula greeleyi* (McFarland, 1909)** — Îlet Fortune, rocky intertidal.
Genus *Jorunna* Bergh 1876
***Jorunna spazzola* (Er. Marcus, 1955)** — Anse Colas, meadow of *H. stipulacea*, -13 m.
Genus *Taringa* Er. Marcus, 1955
***Taringa telopia* Er. Marcus, 1955** — Îlet Fortune, rocky intertidal.
Genus *Sclerodoris* Eliot, 1904
***Sclerodoris prea* (Marcus & Marcus, 1967)** — Anse à la Barque, rocky intertidal, -1 m.
Genus *Hoplodoris* Bergh, 1880
***Hoplodoris hansrosaorum* Dominguez, García & Troncoso, 2006** — Grotte Amédier, -16 m.

Family Dendrodoridae O'Donoghue, 1924
Genus *Dendrodoris* Ehrenberg, 1831
* ***Dendrodoris krebsii* (Mörch, 1863)** [27] — Gros mouton de Caret, coral reef, - 5 m.
***Dendrodoris karukeraensis*, new species** — Port-Louis, -15 m.

Description of a new species of *Dendrodoris* Ehrenbergh, 1831

Dendrodoris karukeraensis, new species
(Plate 3)

Material examined: One specimen (holotype MNHN 25715), 27 x 6 mm alive (14 x 5 mm fixed), collected on May 18, 2012 in Oeil (type locality, 16° 26.78' N 61° 32.41' W), Port-Louis, Guadeloupe, on a rocky bottom at 15 m depth, during a night dive. Holotype deposited in the molluscan collections at the Muséum national d'Histoire naturelle, Paris.

Etymology: Toponymic of Karukera, the name by which the ancient inhabitants of Guadeloupe, the Caribbean Indians, knew the island. This ancestral name and the colors white and black, base of crossbreeding, symbolize in this new species the past, the present and the future of Karukera.

Description: Mantle milky white. Large circular blotches, black and dark gray, cover the central region of the body. These blotches entire or fragmented, arranged singly or grouped, only one of them ahead the rhinophores of the holotype. Mantle margin white, slightly undulate and lacking yellow border. Rhinophores with 11 white folds, transparent stalk and thin white tips. Rhinophorical sheaths white, well developed and very tight to the stalks. Gill far behind on the body, composed of six white leaves, bi-tripinnate, arranged in two symmetric sets of three leaves each. One of the leaves smaller than the remaining, so, it looks like there are only five (Plate 3 D). Hiponotum and foot completely white. Sole almost as wide as the body, it protrudes the sides and the back of the body, especially when the animal crawls. Head white, apparently stucked to the upper lip edge of the sole of the foot, this lip divided in the mouth. The animal flees the light, looking for shelter when illuminated, even something as simple as the shadow of a piece of paper floating in the water.

Discussion: *Dendrodoris magagnai* Espinosa & Ortea, 2001, from the Caribbean coasts of Costa Rica, has some black blotches on the mantle, like those of *Dendrodoris karukeraensis*, new species, but it also has yellow spots and the mantle margin tinted with that color. The rhinophores of this species lack rhinophoral sheaths, have less folds in similar size animals (28 x 6 mm) and both the stalks and the gills are stained black. Another diagnostic character of *D. magagnai* is the gill, which consists of seven bi-tripinnate leaves, with pinnae stained black and arranged in a semicircle ahead the anus, different from the two symmetric sets with three white folds each on *D. karukeraensis*, new species.

The most widespread *Dendrodoris* in the Caribbean is *Dendrodoris krebsii* (Morch, 1863), a polychromatic species whose juveniles are always red, regardless of the color of the adult. There are populations in which the adults are white or pale gray, mottled gray and black, however, when they have the size of the holotype of *D. karukeraensis*, new species, the specimens of *D. krebsii* are red colored. In Grand Cul de Sac Marin (Guadeloupe), on rocky bottom from the intertidal up to 5 m deep, individuals of *D. krebsii* are mostly light gray and gray with black spots, this form is very abundant in Gros Mouton de Caret and in Ilet Fortune. In the mangrove of Pointe Coin à Nous, the adults are red or red spotted with black and gray. All these populations, and more than fifty specimens from several Caribbean locations were examined alive, but all were clearly distinguishable from the holotype of *D. karukeraensis* new species.

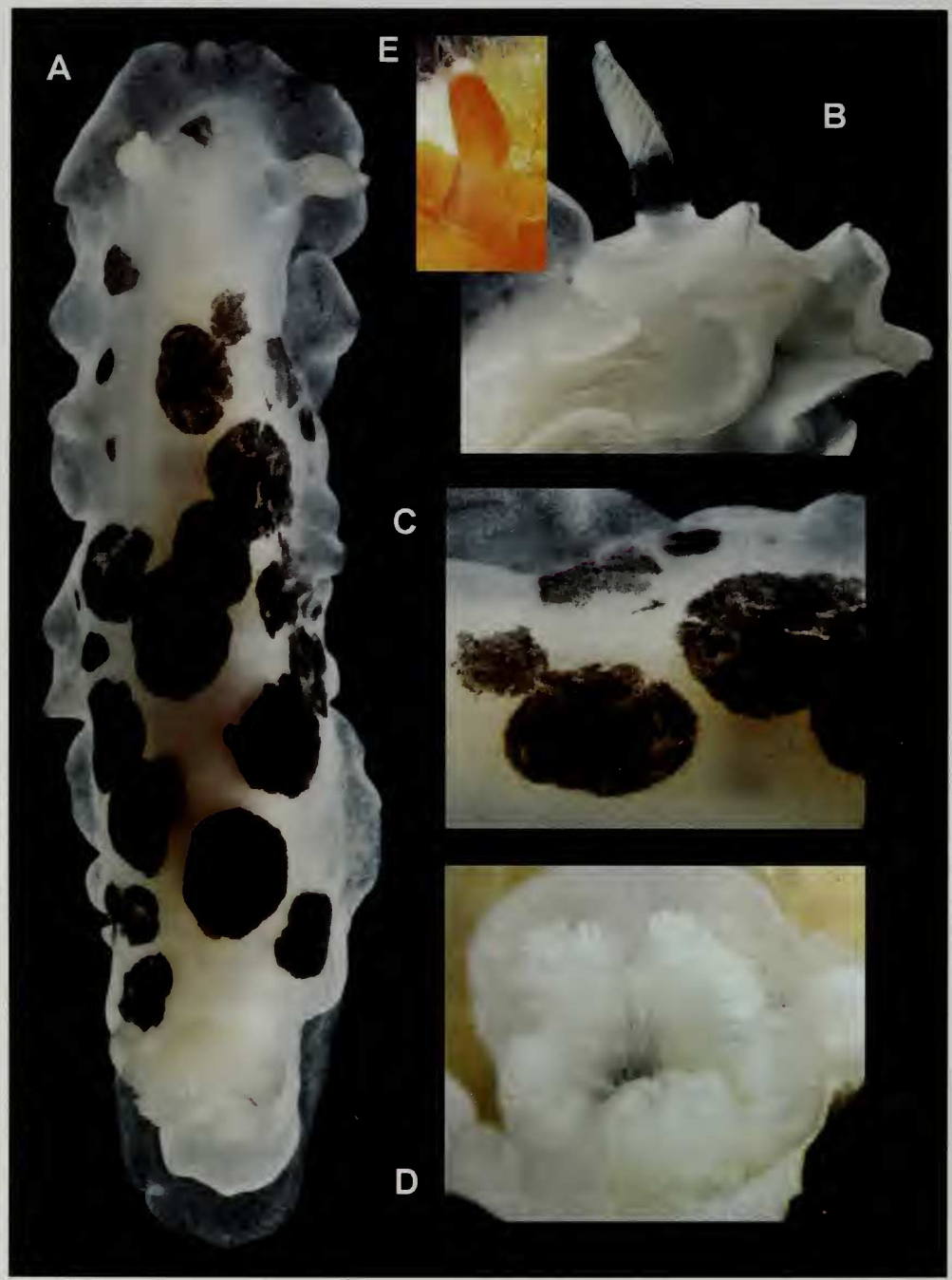

Plate 3.- *Dendrodoris karukeraensis*, new species, holotype: **A.** Dorsal view of the living animal; **B.** detail of the rhinophores (with sheath) and the mouth; **C.** detail of the pigment blotches in the mantle; **D.** Gills; **E.** *Dendrodoris krebsii* (Mörch, 1863), 14 mm long, detail of the rhinophores (almost lacking sheaths).

D. krebssi is comparatively more domed, with the mantle margins narrower compared to the body, the foot does not protrudes behind the mantle, the rhinophores almost lack sheaths (Plate 3 E) and the gill leaves are joined to form a continuous arc around the anus. VALDÉS et al [27] illustrated the different color forms of *D. krebsii* and VALDÉS, ORTEA, AVILA & BALLESTEROS [28] tackled a detailed study of the Atlantic species known to that date.

The record of *Dendrodoris senegalensis* Bouchet, 1975 in the archipelago of Fernando de Noronha, Brazil, made by GARCIA & TRONCOSO [10] did not take into account *Dendrodoris atropos* Bergh, 1879, whose type locality is in Rio de Janeiro, Brazil.

Genus *Doriopsilla* Bergh, 1880

***Doriopsilla* cf. *areolata* Bergh, 1880** [27]

Family PHYLLIDIIDAE Rafinesque, 1814

Genus *Ceratophyllidia* Eliot, 1903

***Ceratophyllidia papilligera* (Bergh, 1890)** [27]

SubOrder DENDRONOTACEA

Family TRITONIIDAE Lamarck, 1809

Genus *Tritonia* Cuvier, 1803

* ***Tritonia bayeri* Marcus & Marcus, 1967** [27]
GCSM, face à Fajou, coral seabed, -15 m.

***Tritonia hamnerorum* Gosliner & Ghiselin, 1987**
GCSM, au large de Fajou, coral seabed, -4 m.

***Tritonia wellsi* Marcus, 1961** Passe à Caret, -32 m.

Genus *Tritoniopsis* Eliot, 1905

***Tritoniopsis frydis* Marcus & Marcus, 1970**
GCSM, au large de Fajou, coral seabed, -24 m.

Family DOTIDAE Gray, 1853

Genus *Doto* Oken, 1815

***Doto awapa* Ortea, 2001** Sec Ferry, -27 m.

***Doto curere* Ortea 2001** Pointe Grigri, -2 m.

***Doto torrelavega* Ortea & Caballer, 2007** GCSM, -24 m.

On the genus *Doto* Oken, 1815 in Guadeloupe

The species of the genus *Doto* in the Caribbean Sea have recently been reviewed by ORTEA [19], which studies and discusses the nine valid species known to that date and describes nine additional new species. Subsequently, only two species have been described; *Doto torrelavega* Ortea & Caballer, 2007, from the coast of Cuba, and *Doto cristal* Ortea, 2009, from the Caribbean coast of Costa Rica.

Doto uva Marcus, 1955, whose type locality is the island of São Sebastião, Brazil, was recorded in Chile by MARCUS [12] and is still the most controversial species of the genus in America. It was one of the first *Doto* described in the tropical Western Atlantic and his specific epithet (which means grape), reflects the basic structure of the cerata of most of the species of the genus (a bunch of grapes), so, scientific literature is full of misidentifications.

The original description of *D. uva* was based on a 4.5 mm specimen and pointed several diagnostic characters to correctly identify the species:

1. Rhinophoral sheath extended forward forming a peak.
2. Body translucent white with orange viscera penetrating the cerata.
3. Five pairs of cerata with 4-5 rings each. This rings composed of 6-7 white tubercles surrounded by branched black lines.
4. Rhinophores lack black pigment, not even on the axis.

No animal with these characteristics has been collected so far in the Caribbean, though VALDÉS, HAMANN, BEHRENS & DUPONT [27] feed the controversy (pp. 214 and 216) by calling *D. uva*, an animal lacking black pigment in the rhinophores, to one specimen of *Doto chica* Marcus & Marcus, 1960 (type locality: Florida), which has black rhinophores and whose body is also black on the back and sides, even after fixation, additionally, the latter species has disperse papillae on the mantle. *D. uva* from southern hemisphere, has none of the distinctive features of *D. chica*. Despite this, VALDÉS *et al.* [27] ignore the redescription of *D. chica* by ORTEA [19] to give stability to one of the most abundant species in the Caribbean, and they identify as *D. chica* to one specimen from Bahamas with transparent body, describing its coloration and adding: "*The specimen illustrated here matches the original description of the species*", but, the original description done by MARCUS & MARCUS [13] was based on a preserved specimen (holotype) and no data on the living animal were available. Additionally, VALDÉS *et al.* [27] (pp. 214-215) illustrate an animal from Curaçao under the name *Doto wildei* Marcus & Marcus, 1970 (= *Doto caramella wildei*), whose type of cerata fit in the original description of *Doto uva*. This frivolity in the identification of the Caribbean species contrasts with the efforts of other authors to clarify ancient species like *Doto pigmea* Bergh, 1871 (ORTEA, MORO & ESPINOSA [23]), or poorly described like *Doto pita* Marcus, 1955 (ORTEA, MORO & ESPINOSA [24]), or misquotations like *Doto cinerea* Trinchese, 1881 in the Caribbean (= *Doto escatllari* Ortea, Moro & Espinosa, 1997), prior to the revision of the genus by ORTEA [19].

FISCHER, VAN DER VELDE & ROUBOS [8] make an attempt to clarify the status of *Doto uva*, but they ignore the review of the genus (ORTEA [19]) and tackle the anatomical and histological study based on specimens from Brazil and Chile. These specimens are illustrated in the Figure 1 of their paper, and they actually belong to two different taxa. The specimens from Brazil were collected in the type locality of *Doto uva* (island of São Sebastião) and they have rhinophoral sheath extended forward forming a peak, as it's established in the original description of the species. This character is absent in the specimens from Chile, whose cerata are quite different. The anatomical and histological data given by FISCHER *et al.* [8], show that the specimens from Chile and Brazil are different, but the authors did not give a new name to the animals of Chile, and still call it *D. uva*.

BERGH [1] introduced the genus *Heromorpha* Bergh, 1873, whose type species is *Heromorpha antillensis* Bergh, 1873, based on two specimens, 7 and 10 mm long, collected in Saint Thomas. They had jaws in the bucal bulb and the central axis of the rhinophores black, nevertheless, the name *H. antilllensis* has been ignored by the specialists who have studied the genus *Doto* in the Caribbean (see ORTEA & CABALLER [22]). Despite this unjustified oblivion, this was the first record in the Caribbean to a species with the axis of the rhinophores black, but, anyway, it is not possible to link it with the three species of *Doto* collected in Guadeloupe because the two radulas of *H. antillensis* illustrated by BERGH [1]

(Plate VIII, 18, and Plate IX, 2) belong to two different species, probably the first one *Doto chica*, as redescribed by ORTEA [19]. Furthermore, the name *H. antillensis* has not been used in over 100 years, so, it should be considered a *nomen oblitum* in accordance with the recommendations of the International Code of Zoological Nomenclature.

No species of *Doto* has previously been cited in Guadeloupe. VALDÉS *et al.* [27] illustrated a specimen from Martinique under the name *Doto* sp. 1, that could be *Doto awapa* Ortea, 2001, included in this article.

Three species of *Doto* collected by scuba diving between 2 and 27 m depth are studied in this work.

Doto awapa Ortea, 2001
(Plate 4 A-C & 9 D)

Avicennia, supplement 3: 21-23, Figure 9, Plate IIG.
Type locality: Punta Mona, Limón, Caribbean coast of Costa Rica.

Material examined: Sec Ferry, Guadeloupe (16°17.51'N, 61°48.98'W), May 12, 2012, two specimens of 4 and 5 mm alive together with their spawn, collected on hydrozoans (*Aglaophenia* sp.) in a rocky bottom at 27 m depth.

Remarks: The specimens collected in Guadeloupe were the same size as the type material and had no differences with the original description. Cerata arranged in five pairs, with rounded tubercles mottled with white spots. Pseudobranchia regular and transparent, with 3-5 branches, with one or more snow white dots at the end of each branch. Entire body covered by snow white spots, even on the surface of the rhinophores (Plate 4 C), in which they mask the internal thin black axis, which may be fragmented. Rhinophoral sheaths, anterior keel and anal papila speckled with white dots.

Spawn (Plate 4 A-B) with yellowish eggs (white in the original description), consists of tapered loops (boomerangs), with alternate orientation in the ribbon, each loop is: 2-4 mm long, 0.5-0.6 mm thick and 1-1.2 mm high. It can contain two or three superposed layers of 3-5 eggs. Eggs about 175 microns on average. In the original description, the height and the thickness of the spawn were confused.

VALDÉS *et al.* ([27]: p. 220) illustrate a specimen from Martinique that could belong to this species, even when the black axis in the rhinophores is not visible in the photography. This is the first record of *D. awapa* after the original description in the Caribbean of Costa Rica and the first published photographs of live animals.

Doto curere Ortea 2001
(Plates 4 D-E, 5 & 9 B)

Avicennia, supplement 3: 17-18, Figure 7, Plates IID and IIIB.
Type locality: Puerto Viejo, Limón, Costa Rica.

Material examined: Pointe Gris-Gris, Port-Louis, Guadeloupe (16°23.57'N 61°31.37'W), May 17, 2012, 14 specimens 3-12 mm long alive with their spawn, collected on hydroids (*Halocordyle* sp.), in a rocky bottom at 2 m deep. GCSM, Guadeloupe (16°21.81'N 61°31.78'W), May 20, 2012, 2 specimens

12 mm long alive with their spawn, collected on hydroids (*Halocordyle* sp.) in a meadow of *Thalassia testudinum* at 5 m deep.

Remarks: All specimens showed the following diagnostic characters contained in the original description of *Doto curere* (ORTEA [19]): rhinophoral sheath translucent gray (Plate 4 D), with snow white dots on the stem and on the edge, which can be very abundant. Anterior region extended forward forming a lobe. Rhinophores longer than twice the sheath, translucent, with the inner axis black and snow white dots on the surface (Plate 4 D). Ahead the rhinophoral sheath there is a keel with white dots, that can cover it completely. Body translucent gray, with a blackish fade, more dense on the back and the sides. Areas between two successive cerata translucent, lacking black pigment, with snow white dots, particularly at the base of the cerata. Head edged with white dots anteriorly (Plate 4 D), which form a band that can be seen in dorsal and ventral views. The holotype was 7 mm long (ORTEA [19], Figure 7), with 7 pairs of cerata, while the animals from Guadeloupe have 9 pairs of cerata in the larger animals (11-12 mm), 7 pairs if 7-10 mm long, 6 at the size of 5-6 mm and 5 pairs in 3-5 mm specimens. In 7 of the 16 specimens collected, the largest cerata were at the third pair. As in the holotype, larger cerata (Plate 4 E) have up to seven rings of tubercles with a bluish hue, that shows of like a blue colored inner sphere; conspicuous when lacking pigment in the surface and dimmed when there is that pigmentation, whether white, yellow or something blue. Pseudobranchia transparent and regular, it can reach to half the length of the cerata and comprises 1-4 rounded branches each side of the main axis. Each branch can be stained with white, and show a metallic blue dot. Digestive gland can also partially penetrate the base of the central axis and the lateral branches. Anal papilla prominent and stained with white, like the genital papilla (Plate 4 D). In preserved animals, black pigment remains on the body and the cerata turn white.

Radula in a medium size specimen (4 mm fixed) with 102 teeth of about 15 microns (Plate 5 E). Teeth with a central cusp and two additional on each side. A small extra denticle is attached alternatively to one of the sides of the central cusp in successive teeth. No colored jaws observed.

Spawn is a white ribbon, 2 to 2.4 mm high, with two rows of white eggs of about 120 microns, enclosed in capsules of 240 microns (Plate 5 A-C) and deposited on the major branches of the hydroids. As in other species of the genus, the ribbon shows alternate horseshoe bends and straight areas.

D. curere Ortea 2001 and *Doto cabecar* Ortea, 2001, share a very similar structure of the cerata that can lead to misidentifications: a dark blue sphere inside the tubercles. The best diagnostic character to distinguish both species is the black axis in the rhinophores of *D. curere*, which remains even in preserved animals, absent in *D. cabecar*. *D. curere* inhabits hidroids of the genus *Halocordyle* and *D. cabecar* in *Thyrosciphus*. ORTEA & CABALLER [21] give additional data to the original description of *D. cabecar*.

This is the first record of *Doto curere* after its original description in the Caribbean of Costa Rica and the first time that live animals are illustrated. The radula and spawn are described for the first time.

Doto torrelavega Ortea & Caballer, 2007
(Plates 4 F & 9 C)

Avicennia 19: 122-125, figures 1 and 2.
Type locality: Náutico, Playa, Havana, Cuba.

Material examined:
GCSM, face à Fajou, (16°21.76N 61°36.35'W), May 5, 2012, two specimens 10 mm long with their spawn, collected on hydroids (*Thyroscyphus marginatus*), in coral reefs of the outer slope to 24 m deep.

Remarks: The coloration and the remaining anatomical characters of the specimens from Guadaloupe, fit in the original description of the species: orange body with golden spots; rhinophores conical covered with yellow or gold pigment on the surface; rhinophoral sheaths with the edges fragmented; a triangular keel present ahead each rhinophore; seven pairs of cerata with globose tubercles, whitish and surrounded at the base by orange pigment that forms a ring around it; a large internal pseudobranquia with the shape of an open hand; conspicuous anal papillae and genital papilla, with tubercles and rugosities on its surface.

The radula of a 10 mm long animal has 77 teeth of about 20 microns, with three cusps on each side of the central cusp, the latter bearing an extra denticle on each side.

The spaw is deposited on the hydroid *Thyrosciphus marginatus*. The ribbons are longer than those originally described; up to 30 mm long in two segments of 15 mm each, forming an arc. Each segment shows more than 15 alternate horseshoe bends. A sagital section of the ribbon is up to 10 eggs high and 3 eggs thick. The eggs are pinkish, with 155 microns in average diameter, enclosed in oblong capsules of 220 microns.

VALDÉS *et al.* [27] (p. 218) illustrate an animal from Culebra Island, Puerto Rico, under the name *Doto varaderoensis* Ortea, 2001, which could belong to this species. This is the first record of *Doto torrelavega* after its original description in the coast of Cuba.

Family BORNELLIDAE Bergh, 1874
Genus *Bornella* Gray, 1850
Bornella calcarata **Mörch, 1863** [17]

SubOrder AEOLIDACEA
Family FLABELLINIDAE Bergh, 1889
Genus *Coryphella* Voigt, 1834
Coryphella dushia **Marcus & Marcus, 1963** — Baie de Bouillante, -13 m.

Family FACELINIDAE Bergh, 1889
Genus *Learchis* Bergh, 1896
Learchis poica **Marcus & Marcus, 1960** — GCSM, îlet à Colas, -15 m.
Learchis evelinae **Edmunds & Just, 1983** — Pointe Gris-Gris (Port-Louis), -2 m.
Genus *Phidiana* Gray, 1850
* ***Phidiana lynceus*** **(Bergh, 1867)** [1] — Plage de Bois Jolan, mixed meadow, -1m.
Genus *Favorinus* Gray, 1850
Favorinus auritulus **Er. Marcus, 1955** — Tête à l'Anglais, rocky bottom, -23 m.
Genus *Dondice* Er. Marcus, 1958
Dondice occidentalis **(Engel, 1925)** — Îlet Fortune, rocky intertidal.

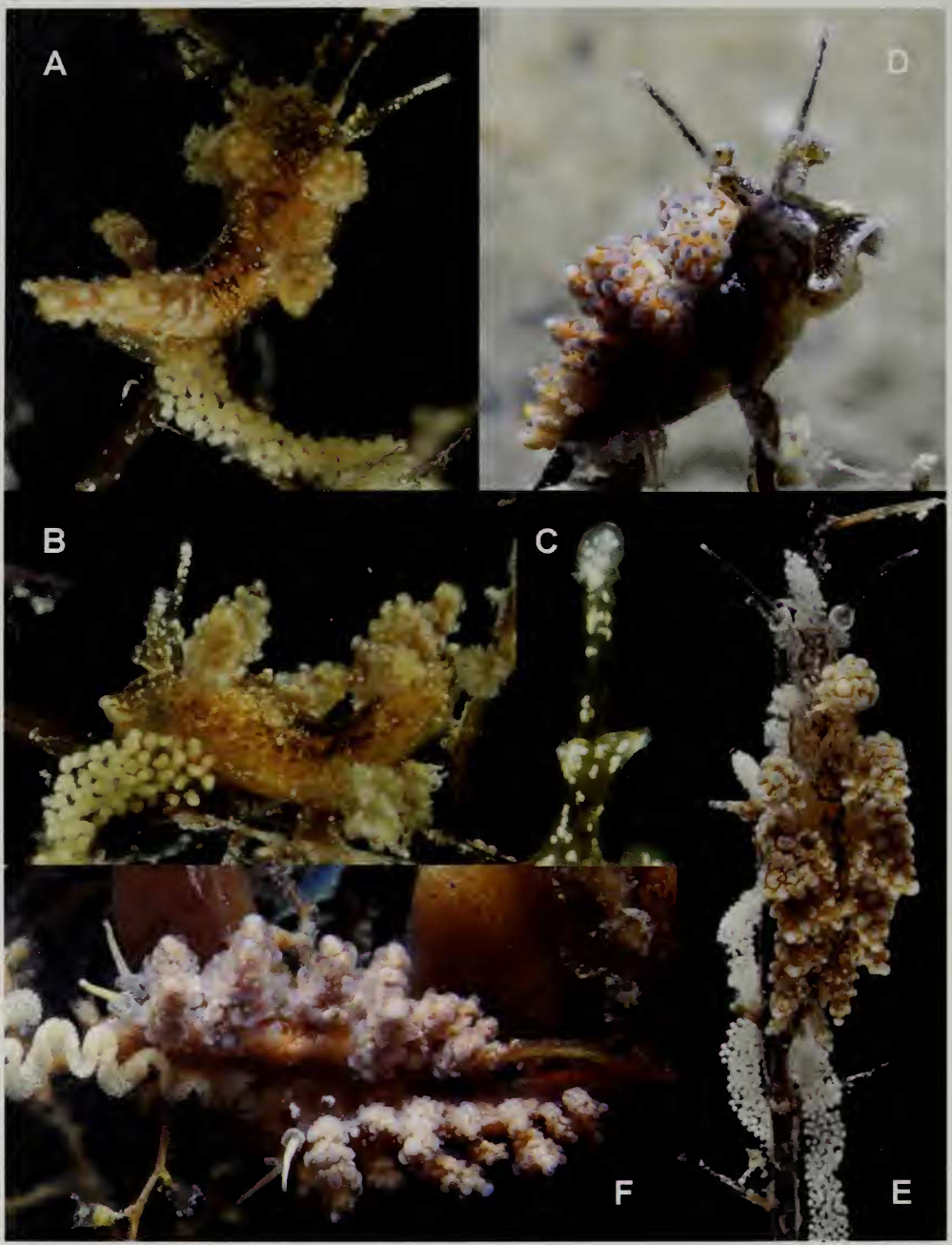

Plate 4.- *Doto* from Guadeloupe in their natural habitat: **A-C.** *Doto awapa* Ortea, 2001; **A.** Dorsal view; **B.** Ventral view; **C.** Detail of the rhinophore with black axis; **D-E.** *Doto curere* Ortea, 2001; **D.** Dorso-ventral view; **E.** Dorsal view; **F.** *Doto torrelavega* Ortea & Caballer, 2007.

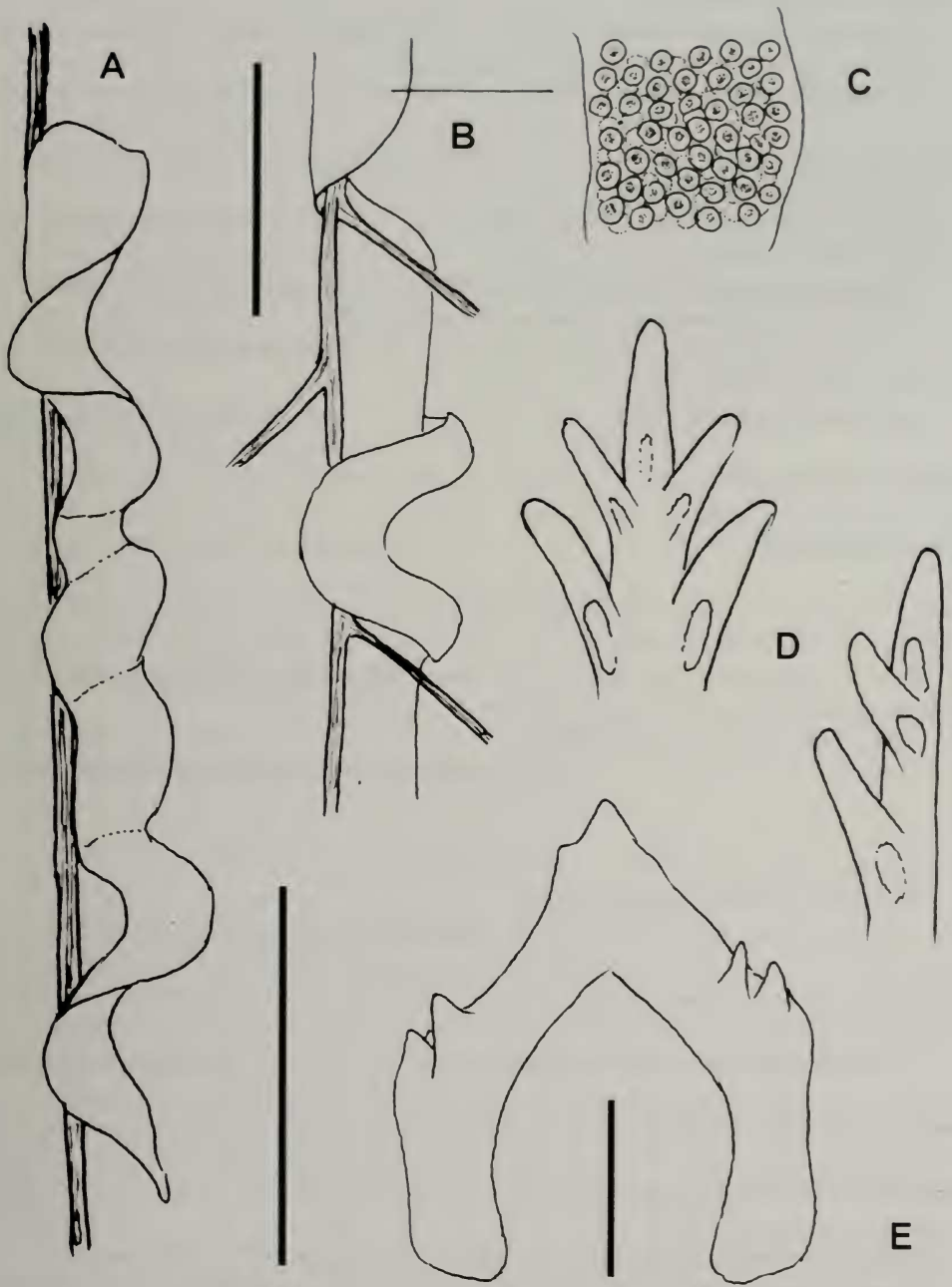

Plate 5.- *Doto curere* Ortea, 2001: **A-C.** Scheme of the spawn and detail of the eggs in the ribbon (scale 3 mm); **D.** Pseudobranchia; **E.** Radular teeth (scale 25 µm).

Genus *Godiva* Er. Marcus, 1957

***Godiva rubrolineata* (Edmunds, 1964)** GCSM, au large de Fajou, coral seabed, -22 m.

Genus *Nanuca* Er. Marcus, 1957

***Nanuca sebastiani* Er. Marcus, 1957** Îlet Fortune, rocky intertidal.

Family Aeolidiidae Gray, 1827

Genus *Spurilla* Bergh, 1864

***Spurilla neapolitana* (Delle Chiaje, 1823)** Anse à la Barque, rocky intertidal, -1 m

Genus *Berghia* Trinchese, 1877

***Berghia creutzbergi* Marcus & Marcus, 1970** Pointe Gris-Gris (Port-Louis), -2 m.

***Berghia marcusi* Dominguez, Troncoso & García, 2008**
Îlet à Cabrit, meadow of *Thalassia*, -1 m.

Genus *Aeolidiella* Bergh, 1867

***Aeolidiella alba* Risbec, 1928** Derrière Ilet Fajou, -6 m.

Subclass SACOGLOSSA

Order OXYNOACEA

Family Oxynoidae Stoliczka, 1868 (1847)

Genus *Oxynoe* Rafinesque, 1814

***Oxynoe antillarum* Mörch, 1863** Vieux Habitants, meadow of *H. stipulacea*.-27 m.

Genus *Lobiger* Krohn, 1847

* ***Lobiger souverbii* P. Fischer, 1857** [9]
Vieux Habitants, meadow of *H. stipulacea*, -23 m.

Family Juliidae A. Smith, 1885

Genus *Berthelinia* Crosse, 1875

***Berthelinia caribbaea* Edmunds, 1963**
Plage de Bois Jolan, in *Caulerpa verticillata*, -1 m.

Family Volvatellidae Pilsbry, 1895

Genus *Ascobulla* Ev. Marcus, 1972

Ascobulla ulla (Marcus & Marcus, 1970) Oeil (Port-Louis), -16 m.

Order PLACOBRANCHACEA

Family Placobranchidae Gray, 1840

Genus *Elysia* Risso, 1818

* ***Elysia cauze* Marcus, 1957** PCSM, on algae, -6 m.

* ***Elysia crispata* (Mörch, 1863)** [17] Îlet Fortune, rocky intertidal.

***Elysia flava* Verrill, 1901** [27]

***Elysia nisbeti* Thompson, 1977** Gros mouton de Caret, coral reef, -5 m.

* ***Elysia ornata* (Swainson, 1840)** [27] Îlet Pigeon, on *Bryopsis*, -15m.

***Elysia papillosa* Verrill, 1901** [27]

***Elysia purchoni* Thompson, 1974** Grotte aux barracudas, Port-Louis, -19 m.

***Elysia timida* (Risso, 1818)** Îlet Pigeon, -15 m.

***Elysia tuca* Marcus & Marcus, 1967** GCSM, sandy bottom, -3 m.
***Elysia zuleicae* Ortea & Espinosa, 2002** GCSM, meadow of *Thalassia*, -3 m.
Genus *Checholysia* Ortea, Espinosa, Moro & Caballer, 2005
***Checholysia patina* (Ev. Marcus, 1980)** GCSM, meadow of *Thalassia*, -3 m.
Genus *Thuridilla* Bergh, 1872
***Thuridilla mazda* Ortea & Espinosa, 2000** Sec Pâté, -25 m.

Family CALIPHYLLIDAE Tiberi, 1881
Genus *Caliphylla* A. Costa, 1867
***Caliphylla mediterranea* A. Costa, 1867** Pointe de l'Ermitage, rocky intertidal, -1 m.
Genus *Cyerce* Bergh, 1871
***Cyerce antillensis* Engel, 1927** Vieux Habitants, meadow of *H. stipulacea*, -27 m.

Family JULIIDAE A. Smith, 1885
Genus *Polybranchia* Pease, 1860
***Polybranchia borgnini* (Trinchese, 1896)**
Anse Colas, meadow of *H. stipulacea*, -13 m.
* ***Polybranchia viridis* (Deshayes, 1857)** [5] Îlet Fortune, rocky intertidal.

Family HERMAEIDAE H. Adams & A. Adams, 1854
Genus *Costasiella* Pruvot-Fol, 1951
***Costasiella ocellifera* (Simroth, 1895)**
Port-Louis, Ouest Petit-Canal, muddy bottom with *Avrainvillea*, -8 m.
Genus *Placida* Trinchese, 1877-79
***Placida verticilata* Ortea, 1980** Pointe de l'Ermitage, rocky bottom, on *Codium*, -11 m.

4. DISCUSSION

This catalog lists 117 species of sea slugs from Guadeloupe (97 opisthobranchia and 20 sacoglossa) collected on the expedition Karubenthos-2012, plus another 10 which have already been mentioned in the literature, so, the total number of species in the Archipelago is 127. Of the 117 species collected alive, one is described as new for science (*Dendrodoris karukeraensis*, new species) and 85 are recorded for the first time in Guadeloupe.

Among the already cited species, whose animals have been collected again, there are 16 Cephalaspidea. Most of them were described or cited by d'ORBIGNY [6] in his chapter *Molluscs* of the book: *Historia, Física Política y Natural de la Isla de Cuba*, edited by de la Sagra. In this work, he recorded 163 species of molluscs from Guadeloupe, describing 21 new species.

The orientation of the sampling to the collection of prosobranchs and the low effort in direct search and night diving, together with the advancement of the rainy season, are some of the reasons that may explain the absence in the inventory of large and conspicuous species of sea slugs, such as: *Bornella calcarata*, 65 mm long, with vivid orange pigmentation; *Hypselodoris acriba*, a blue chromodorid that exceeds 60 mm long or *Plocamopherus pilatecta*, a luminiscent slug up to 30 mm, of which only a juvenile has been collected. The most of the Aeolididae are also absent in the list, such as the 6 species of *Flabellina* with showy livery, exceeding 20 mm, known in the Caribbean, or the representatives of Eubranchidae and

Tergipedidae; not a single species of *Cuthona* has been collected, however, this genus is very common in the Caribbean Sea. The scarcity of sampling in the mangroves and anthropized sites, where Bryozoa (*Zoobotryon* spp. and others) are abundant, may explain the absence and the underrepresentation of species of *Okenia*, *Polycera*, *Bermudella*, etc. Same reasons would explain not having collected *Hydatina physis*, *Micromelo undatus* and *Umbraculum umbraculum*, cited in Guadeloupe by POINTIER & LAMY [26].

A highlight in the inventory is the finding of *Polybranchia borgnini* (Trinchese, 1896), a common sacoglossa in the Canary Islands and in the Mediterranean Sea, which is recorded for the first time in the Caribbean associated to *Halophila stipularia* meadows and becomes the sixteenth amphi-Atlantic sacoglossa known in our experience. Highlights, also, the discovery of two recently described species from Brazil, *Hoplodoris hansrosaorum* and *Berghia marcusi* cited for the first time in the Lesser Antilles, Western Caribbean Sea. Other species whose type locality is in Brazil, *Spinoaglaja petra* (Ev. Marcus, 1976), mistaken with *Spinoaglaja aeci* Ortea & Espinosa, 2001 by VALDÉS *et al.* [10] and illustrated in Plate 7 I, is discussed in another article of this journal where the spines associated to the protoconch are compared to distinguish the two species.

Two additional species described in the western end of the insular Caribbean, *C. mariagordae* and *P. bagaensis*, are recorded for the first time in the eastern end of the Caribbean islands arc. They show a case of gigantism; at the same size of the living animal, the internal shells of the specimens from Guadeloupe are smaller and have a less complex development of the protoconch that those from western Cuba. Thus, the shape of the shell in specimens 3-5 mm long from Cuba is the same as in specimens 5-8 mm long from Guadeloupe. This could be explained by the low density of their populations or by increased food availability.

The site with higher diversity was îlet Fortune, where 19 species were collected, 17 % of the total.

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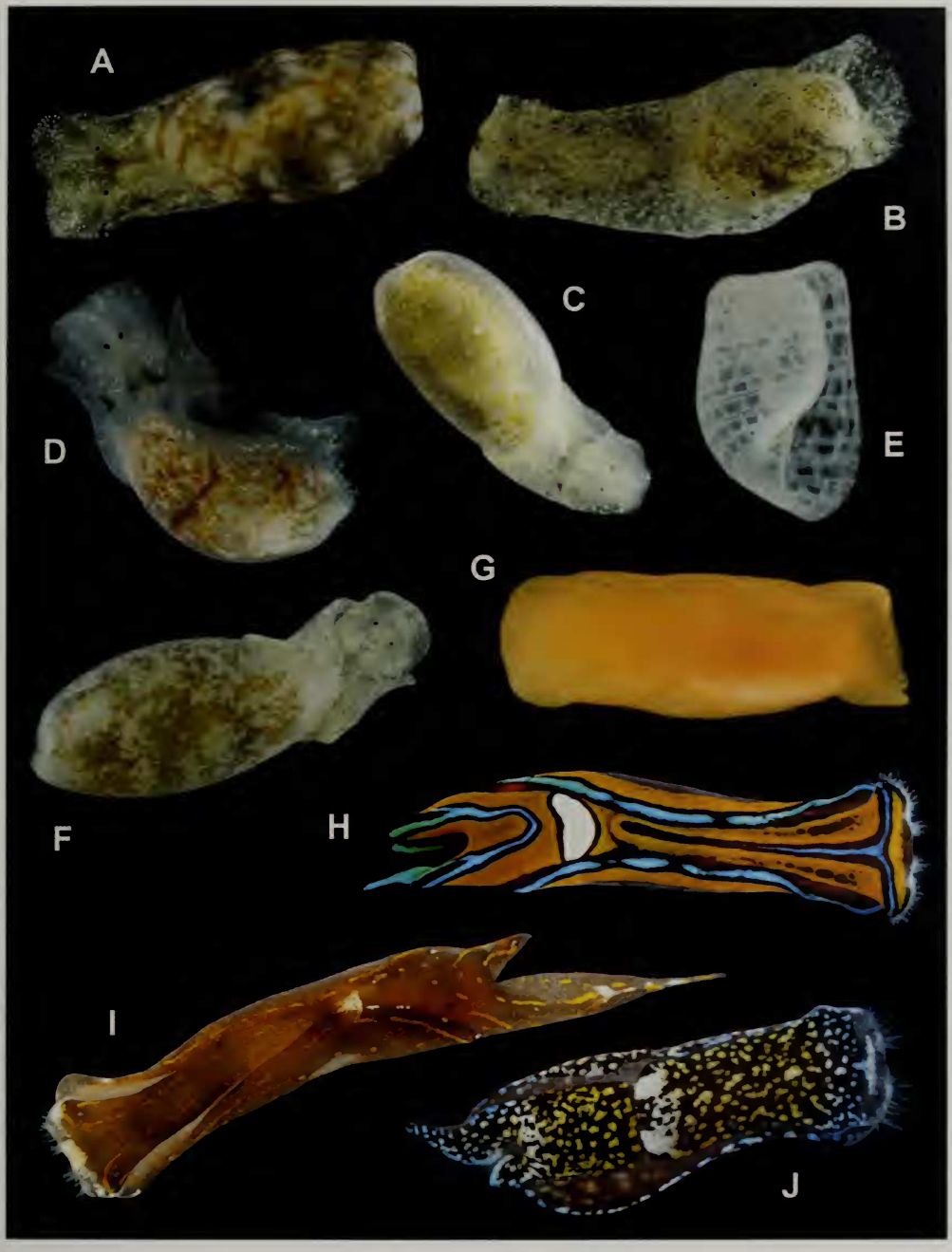

Plate 6.- Cephalaspidea: **A.** *Bulla occidentalis*; **B.** *Haminoea elegans*: **C.** *Haminoea petiti*; **D.** *Atys caribaeus*; **E.** *Atys alayoi*; **F.** *Atys sharpi*; **G.** *Philine caballeri*; **H.** *Chelidonura hirundinina*; **I.** *Chelidonura cubana*; **J.** *Chelidonura mariagordae*.

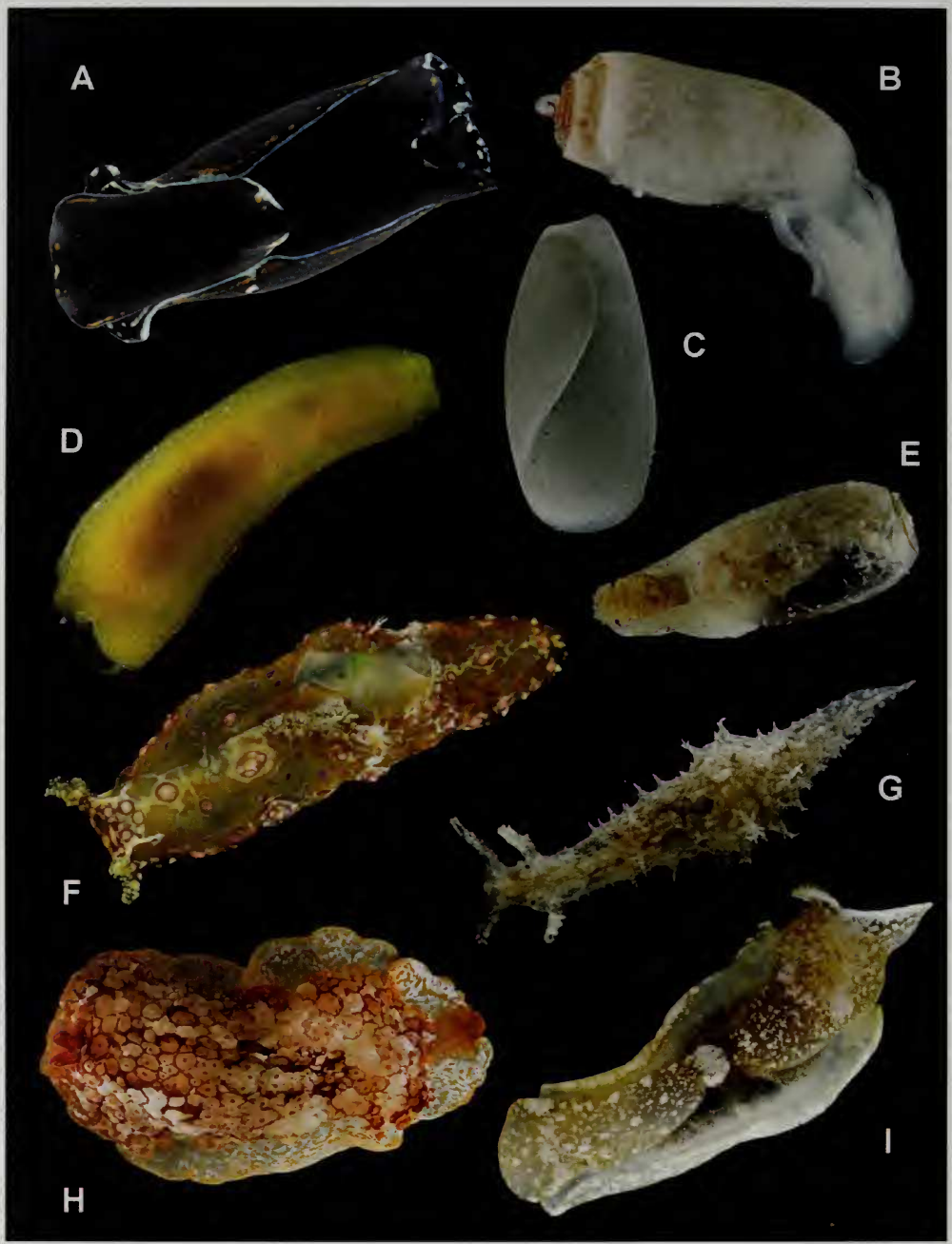

Plate 7.- Cephalaspidea, Runcinacea, Aplysiomorpha and Pleurobranchomorpha: **A.** *Philinopsis bagaensis*; **B.** *Tornatina liratispira*; **C.** *Scaphander watsoni*; **D.** *Lapinura divae*; **E.** *Akera bayeri*; **F.** *Petalifera petalifera;* **G.** *Stylocheilus striatus*; **H.** *Pleurobranchus areolatus*; **I.** *Spinoaglaja petra.*

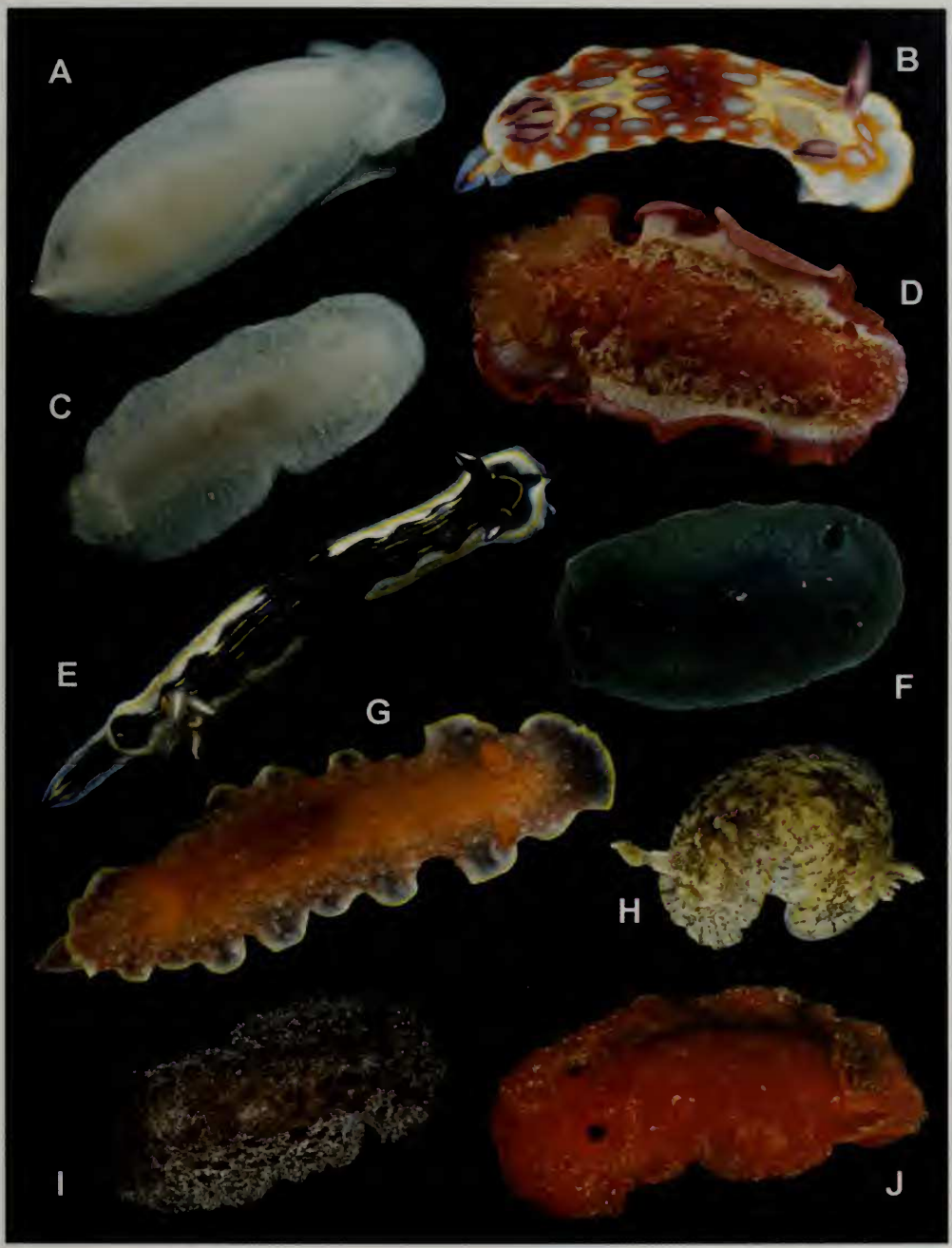

Plate 8.- Cephalaspidea and Nudibranchia: **A.** *Volvulella persimilis*; **B.** *Chromodoris clenchi*; **C.** *Cadlina rumia*; **D.** *Caribranchus morsomus*; **E.** *Hypselodoris ruthae*; **F.** *Siraius kyolis*; **G.** *Noumea regalis*; **H.** *Aphelodoris antillensis*; **I.** *Discodoris hedgpethi*; **J.** *Platydoris angustipes*.

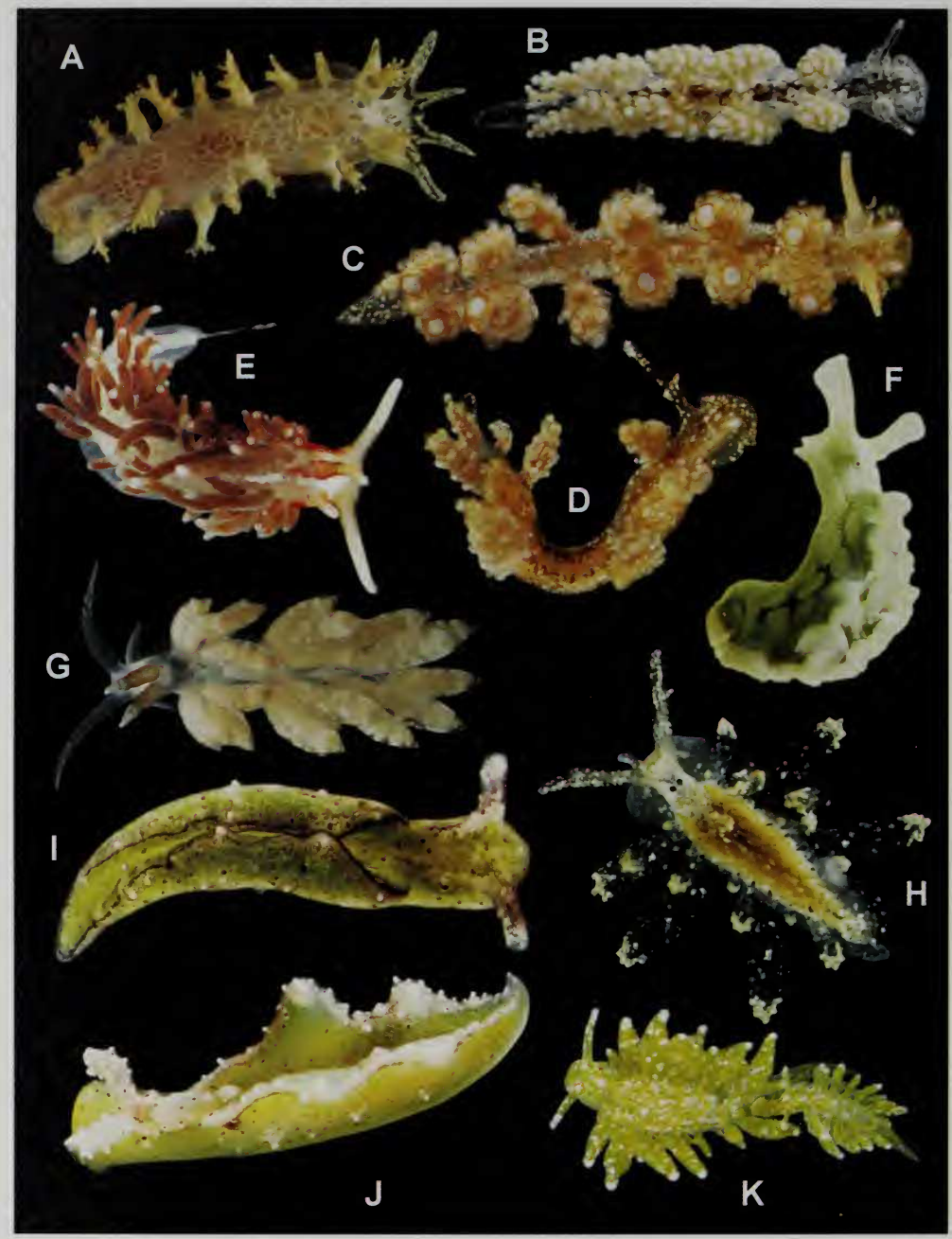

Plate 9.- Nudibranchia and Sacoglossa: **A.** *Tritonia bayeri*; **B.** *Doto curere*; **C.** *Doto torrelavega*; **D.** *Doto awapa*; **E.** *Learchis evelinae*; **F.** *Elysia crispata*; **G.** *Favorinus auritulus*; **H.** *Cyerce habanensis*; **I.** *Elysia nisbeti*; **J.** *Elysia cauze*; **K.** *Placida verticilata*.